

Claims

1. Method for optically monitoring a running fibre strand made of natural fibres, in which at least one light signal is transmitted onto the fibre strand and in which a light signal emitted by the fibre strand is received by a detector and is evaluated to determine a foreign substance made of synthetic material, characterised in that an output region for the light signal is scanned by the detector, which is arranged outside an input region, in which the light signal impinges on the fibre strand, the light signal being transmitted from the input region to the output region by the light-guiding properties of the foreign substance made of synthetic material.
2. Method according to claim 1, characterised in that the light signal impinges on the fibre strand in the input region with a spacing of a few millimetres from the output region.
3. Method according to claim 2, characterised in that the light signal is projected as a very narrow band, lying transversely to the fibre strand, onto the surface of the fibre strand.
4. Method according to any one of claims 1 to 3, characterised in that the light signal is generated by a laser, which projects a bundled light signal in the input region onto the fibre strand.
5. Method according to any one of claims 1 to 4, characterised in that the light signal is received by a

photocell, the luminous intensity of the signal being evaluated to determine the foreign substance.

6. Method according to claim 5, characterised in that the measured luminous intensity is compared with a threshold value for evaluation, in that a fault signal is generated when the threshold value is exceeded and in that the fault signal triggers a process intervention.

7. Method according to any one of the preceding claims, characterised in that the size of the output region is determined by an optical system associated with the photocell.

8. Device for carrying out the method according to any one of claims 1 to 7 with a light source (2), with a running fibre strand (1) made of natural fibres, illuminated by the light source (2), with a detector (9) for receiving a light signal (7) emitted by the fibre strand (1) and with evaluation electronics (10) connected to the detector (9) for determining a foreign substance (5) made of synthetic material, characterised in that the light source (2) is directed onto an input region (4), in which the light signal (3) impinges on the fibre strand (1), in that the detector (9) is directed onto an output region (6) to receive the transmitted light signal (7), and in that the input region (4) and the output region (6) are separated from one another.

9. Device according to claim 8, characterised in that a spacing A is provided between the input region (4) of the light signal (3) and the output region (6) of the light signal (7).

10. Device according to claim 8, characterised in that the spacing is in the region of 0.5 mm to 5 mm.

11. Device according to any one of claims 8 to 10, characterised in that the light source (2) is provided such that the light signal (3) can be projected as a very narrow band (14) lying transversely to the running direction of the fibre band (1).

12. Device according to claim 11, characterised in that the light source is configured as a laser (2).

13. Device according to any one of claims 8 to 12, characterised in that the detector (9) is formed by a photocell, by which the luminous intensity of the signal (7) is detected.

14. Device according to claim 13, characterised in that an optical system (8) is associated with the photocell (9) and in that the optical system (8) has at least one macrolens, by which the output region (7) is determined.

15. Device according to any one of claims 8 to 15, characterised in that the evaluation electronics (10) have a storage means (11) for receiving a threshold value for the luminous intensity and computer means (12) for determining a fault signal for identifying a foreign substance.